

Chemistry I: Rules for assigning oxidation numbers

1. An uncombined element (free element) has an oxidation number of zero (0).
2. A monatomic ion (1 atom) has an oxidation number equal to its charge.
3. Fluorine's oxidation number is always -1 .
4. Oxygen has an oxidation number of -2 in all compounds except peroxide where the oxidation number is -1 .
5. Hydrogen has an oxidation number of $+1$ except when combined with metals where hydrogen's oxidation number will be -1 .
Ex: NaH (sodium hydride)
6. All Group 1 elements have an oxidation number of $+1$. All Group 2 elements have an oxidation number of $+2$.
7. Second element in a binary compound is assigned the oxidation number it would have if it were an ion. (Hint: always negative)
8. The algebraic sum of the oxidation numbers of ALL of the atoms in a compound MUST equal zero.
9. The algebraic sum of the oxidation numbers of ALL the atoms in a polyatomic ion is equal to the charge on the ion. Ex. Sulfate ion is -2 so all the oxidation numbers in this ion must add up to -2 .
10. When in doubt ask your chemistry teacher!!!!!!!!!!